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Littrup et al.

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(54) **CRYOTHERAPY PROBE**

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(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 83 days.

This patent is subject to a terminal disclaimer.

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(58) **Field of Classification Search**

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See application file for complete search history.

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(57) **ABSTRACT**

A method of cooling a material including the steps of (i) providing a cryotherapy instrument, (ii) positioning a portion of the cryotherapy instrument adjacent the material to be cooled, and (iii) circulating a cryogenic fluid through the cryotherapy instrument under physical conditions near a critical point of a liquid-vapor system for the cryogenic fluid. The critical point defines a point in a phase diagram of the liquid-vapor system where molar volumes are substantially equivalent for liquid and gas, whereby vapor lock associated with cooling of the cryotherapy instrument is avoided.

12 Claims, 6 Drawing Sheets

